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Chao, Tze-Fan; Chen, Shih-Ann; Lip, Gregory Y H

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## Accepted Manuscript

Recommendations on stroke prevention for patients having a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines

Tze-Fan Chao M.D. , Shih-Ann Chen M.D. , Gregory Y.H. Lip M.D.

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## Letter to the Editor

### Recommendations on stroke prevention for patients having a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 (males) or 2 (females) in 2019 atrial fibrillation guidelines

Tze-Fan Chao, M.D.<sup>1,2</sup>, Shih-Ann Chen, M.D.<sup>1,2</sup>, Gregory Y. H. Lip, M.D.<sup>3</sup>

<sup>1</sup>Division of Cardiology, Department of Medicine, Taipei Veterans General Hospital, Taipei, Taiwan. <sup>2</sup>Institute of Clinical Medicine, and Cardiovascular Research Center, National Yang-Ming University, Taipei, Taiwan. <sup>3</sup>Liverpool Centre for Cardiovascular Science, University of Liverpool & Liverpool Heart and Chest Hospital, Liverpool, United Kingdom; and Aalborg Thrombosis Research Unit, Department of Clinical Medicine, Aalborg University, Aalborg, Denmark

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#### Disclosures

Prof Lip has served as a consultant for Bayer, Merck, Sanofi, BMS/Pfizer, Daiichi-Sankyo, Biotronik, Medtronic, Portola and Boehringer Ingelheim and has been on the speakers bureau for Bayer, BMS/Pfizer, Boehringer Ingelheim, Daiichi-Sankyo, Medtronic.

Address for correspondence

Tze-Fan Chao, M.D.

Division of Cardiology, Taipei Veterans General Hospital

No. 201, Sec. 2, Shih-Pai Road, Taipei, Taiwan

Tel: 886-2-2875-7156; Fax: 886-2-2875-5656

Email: eyckeyck@gmail.com

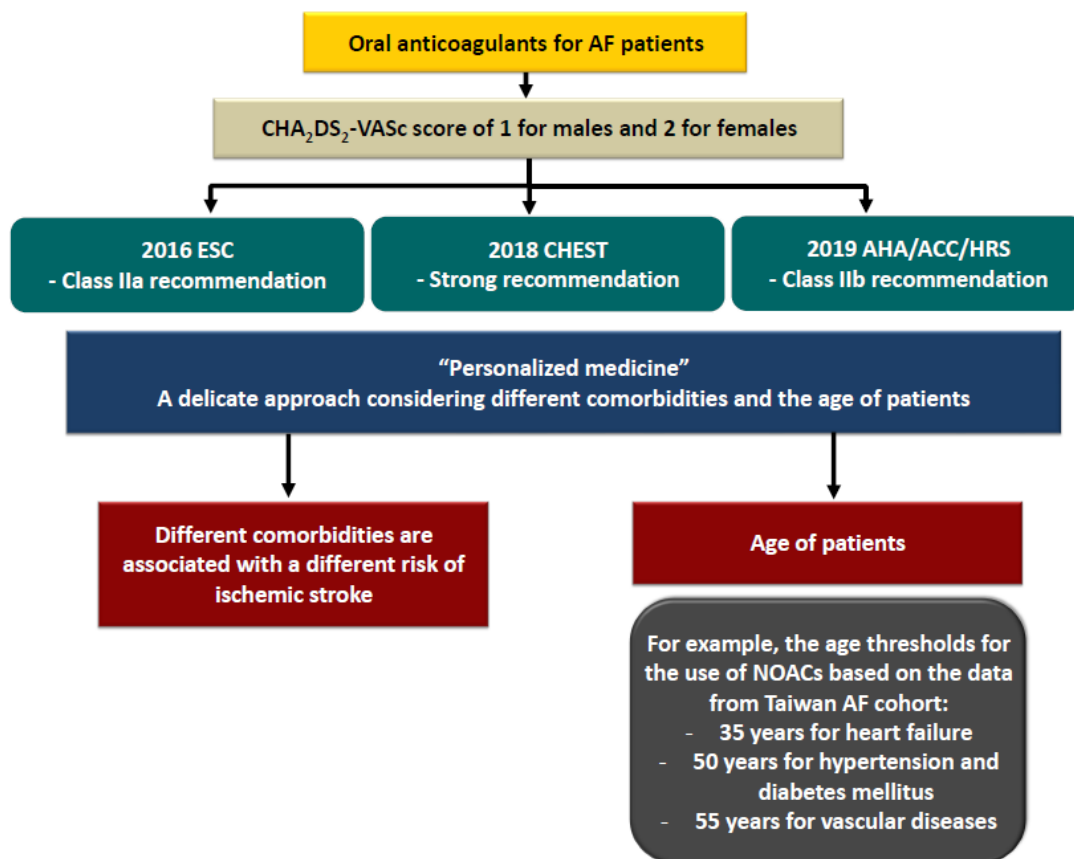
Whether oral anticoagulants (OACs) should be prescribed for patients with atrial fibrillation (AF) having a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 for males or 2 for females has been debated for years. The 2019 AHA/ACC/HRS focused update of the 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation (AF) states that OACs may be reasonable for this AF population (class IIb recommendation).<sup>1</sup> This recommendation is less strong compared to that of the 2016 AF guidelines of European Society of Cardiology (class IIa recommendation) and the 2018 CHEST guidelines.<sup>2,3</sup> These discrepancies of different important guidelines could make this difficult issue even more complicated.

Current recommendations of the international guidelines may perhaps be too simplified regarding this area, and a more delicate approach for these patients is required. After all, clinical factor-based stroke risk stratification schemes such as the CHA<sub>2</sub>DS<sub>2</sub>-VASc score are reductionist in design with the aim to aid clinical decision-making in a simple and practical manner; indeed, the CHA<sub>2</sub>DS<sub>2</sub>-VASc score does not include all possible risk factors associated with stroke in AF. Second, stroke risk is a dynamic process, and a patient's risk profile changes over time. Third, different risk factor components were not equal regarding the risk of ischemic stroke in AF patients with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 for males or 2 for females. For example, age 65-74 years and diabetes mellitus were associated with a higher risk of ischemic stroke than other risk factors among AF patients with one single risk factor beyond sex.<sup>4</sup> Besides, since "age" is an important driver of ischemic stroke, the age of patients also should be taken into consideration when making decisions about stroke prevention, but age is also a continuum of risk such that an AF patient who is age 65 is clearly at lower risk than someone at age 74. Indeed, when that patient turns age 75 and gains 2 points on the CHA<sub>2</sub>DS<sub>2</sub>-VASc score, it does not mean that their risk is doubled.

The introduction of the non-vitamin K antagonist OACs (NOACs) have changed the landscape of stroke prevention. In our recent publication, we proposed that age thresholds for the use of NOACs were different for AF patients having different single risk factors beyond sex despite the same CHA<sub>2</sub>DS<sub>2</sub>-VASc score point (1 for males and 2 for females); that is, 35 years for heart failure, 50 years for hypertension or diabetes, and 55 years for vascular diseases.<sup>5</sup> We therefore suggest that “age” and “comorbidity” are two important factors which should be considered to be incorporated into the guideline recommendations for the use of OACs for patients with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 for males or 2 for females (Figure 1), notwithstanding the fact that clinicians should recognize that risk stratification is designed with practicality in mind and that stroke risk is dynamic rather than static.

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**Figure legend:**

**Figure 1.** Different recommendations in important guidelines and the delicate approach about stroke prevention for AF patients with a CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 1 (males) or 2 (females).

ACC = American College of Cardiology; AF = atrial fibrillation; AHA = American Heart Association; ESC = European Society of Cardiology; NOACs = non-vitamin K antagonist oral anticoagulants